

Amendments to the Claims:

1-59. (cancelled)

60. (currently amended) A medical device comprising:

a biocompatible structure comprising a polymeric coating that coats at least a portion of said structure, said polymeric coating comprising:

(A) a therapeutic agent, wherein said therapeutic agent ~~selected from the group~~ consisting of

(1) ~~is~~ an angiogenic agent;

(2) ~~an agent that enhances gene transfer and integration into tissue and cells;~~

(3) ~~a immunosuppressant;~~

(4) ~~an antiangiogenic agent;~~

(5) ~~an antithrombogenic agent;~~

(6) ~~tissue plasminogen activator;~~

(7) ~~erythropoietin;~~

(8) ~~an antioxidant;~~

(9) ~~an agent blocking smooth muscle proliferation;~~

(10) ~~an anti-inflammatory agent;~~

(11) ~~a calcium entry blocker;~~

(12) ~~an antineoplastic;~~

(13) ~~an antiproliferative or anti-mitotic agent;~~

(14) ~~an anesthetic agent;~~

(15) ~~an anticoagulant;~~

(16) ~~an anti-thrombin antibody;~~

(17) ~~an anti-platelet receptor antibody;~~

~~(18) a prostaglandin inhibitor;~~

~~(19) a platelet inhibitor;~~

~~(20) a vascular cell growth promoter;~~

~~(21) a growth factor receptor antagonist;~~

~~(22) a transcriptional activator;~~

~~(23) a translational promoter;~~

~~(24) a vascular cell growth inhibitor;~~

~~(25) a growth factor receptor antagonist;~~

~~(26) a transcriptional repressor;~~

~~(27) a translational repressor;~~

~~(28) a replication inhibitor;~~

~~(29) an inhibitory antibody;~~

~~(30) an antibody directed against a growth factor;~~

~~(31) a bifunctional molecule consisting of a growth factor and a cytotoxin;~~

~~(32) a cholesterol lowering agent;~~

~~(33) a vasodilating agent;~~

~~(34) an agent which interferes with endogenous vasoactive mechanisms; and~~

~~(35) a cell cycle inhibitors;~~

and

(B) a vector containing a polynucleotide that establishes a gene expression sufficient to produce a therapeutically sufficient amount of one or more products encoded by said polynucleotide, wherein said polynucleotide encodes a polypeptide or protein, wherein said polypeptide or protein selected from the group consisting of

~~(1) is an angiogenic agent;~~

~~(2) an antiangiogenic agent;~~

- (3) ~~an antithrombogenic agent;~~
- (4) ~~tissue plasminogen activator;~~
- (5) ~~erythropoietin;~~
- (6) ~~an antioxidant;~~
- (7) ~~an agent blocking smooth muscle proliferation;~~
- (8) ~~an anti-inflammatory agent;~~
- (9) ~~a calcium entry blocker;~~
- (10) ~~an antineoplastic;~~
- (11) ~~an antiproliferative or anti-mitotic agent;~~
- (12) ~~an anesthetic agent;~~
- (13) ~~an anticoagulant;~~
- (14) ~~an anti-thrombin antibody;~~
- (15) ~~an anti-platelet receptor antibody;~~
- (16) ~~a prostaglandin inhibitor;~~
- (17) ~~a platelet inhibitor;~~
- (18) ~~a vascular cell growth promoter;~~
- (19) ~~a growth factor receptor antagonist;~~
- (20) ~~a transcriptional activator;~~
- (21) ~~a translational promoter;~~
- (22) ~~a vascular cell growth inhibitor;~~
- (23) ~~a growth factor receptor antagonist;~~
- (24) ~~a transcriptional repressor;~~
- (25) ~~a translational repressor;~~
- (26) ~~a replication inhibitor;~~
- (27) ~~an inhibitory antibody;~~

- ~~(28) an antibody directed against a growth factor;~~
- ~~(29) a bifunctional molecule consisting of a growth factor and a cytotoxin;~~
- ~~(30) a cholesterol lowering agent;~~
- ~~(31) a vasodilating agent;~~
- ~~(32) an agent which interferes with endogenous vasoactive mechanisms;~~
- ~~(33) an anti-restenosis agent;~~
- ~~(34) a monocyte chemoattractant protein;~~
- ~~(35) a bone morphogenic protein;~~
- ~~(36) a hedgehog protein and~~
- ~~(37) a cell cycle inhibitors;~~

~~wherein the angiogenic agent is an acidic fibroblast growth factor, basic fibroblast growth factor, vascular endothelial growth factor, epidermal growth factor, transforming growth factor α and β , platelet derived endothelial growth factor, platelet derived growth factor, tumor necrosis factor α , hepatocyte growth factor, or insulin growth factor.~~

61. (cancelled)

62. (currently amended) A method of controlled delivery of a genetic material to a mammalian body comprising:

- (A) applying a polymer coating to at least a portion of a medical device;
- (B) applying a genetic material to said polymer coating to obtain a genetically coated medical device, said genetic material comprising:

(A) (1) a therapeutic agent, wherein said therapeutic agent ~~selected from the~~
~~group consisting of~~

- (1) is an angiogenic agent,
- (2) ~~an agent that enhances gene transfer and integration into tissue and cells;~~
- (3) ~~a immunosuppressant;~~
- (4) ~~an antiangiogenic agent;~~
- (5) ~~an antithrombogenic agent;~~
- (6) ~~tissue plasminogen activator;~~
- (7) ~~erythropoietin;~~
- (8) ~~an antioxidant;~~
- (9) ~~an agent blocking smooth muscle proliferation;~~
- (10) ~~an anti-inflammatory agent;~~
- (11) ~~a calcium entry blocker;~~
- (12) ~~an antineoplastic;~~
- (13) ~~an antiproliferative or anti-mitotic agent;~~
- (14) ~~an anesthetic agent;~~
- (15) ~~an anticoagulant;~~
- (16) ~~an anti-thrombin antibody;~~
- (17) ~~an anti-platelet receptor antibody;~~
- (18) ~~a prostaglandin inhibitor;~~
- (19) ~~a platelet inhibitor;~~
- (20) ~~a vascular cell growth promoter;~~
- (21) ~~a growth factor receptor antagonist;~~
- (22) ~~a transcriptional activator;~~
- (23) ~~a translational promoter;~~

~~(24) a vascular cell growth inhibitor;~~

~~(25) a growth factor receptor antagonist;~~

~~(26) a transcriptional repressor;~~

~~(27) a translational repressor;~~

~~(28) a replication inhibitor;~~

~~(29) an inhibitory antibody;~~

~~(30) an antibody directed against a growth factor;~~

~~(31) a bifunctional molecule consisting of a growth factor and a cytotoxin;~~

~~(32) a cholesterol lowering agent;~~

~~(33) a vasodilating agent;~~

~~(34) an agent which interferes with endogenous vasoactive mechanisms; and~~

~~(35) a cell cycle inhibitors;~~

and

(B) (2) a vector containing a polynucleotide that establishes a gene expression sufficient to produce a therapeutically sufficient amount of one or more products encoded by said polynucleotide, wherein said polynucleotide encodes a polypeptide or protein, wherein said polypeptide or protein ~~selected from the group consisting of~~

~~(1) is an angiogenic agent,~~

~~(2) an antiangiogenic agent;~~

~~(3) an antithrombogenic agent;~~

~~(4) tissue plasminogen activator;~~

~~(5) erythropoietin;~~

~~(6) an antioxidant;~~

~~(7) an agent blocking smooth muscle proliferation;~~

~~(8) an anti-inflammatory agent;~~

- ~~(9) a calcium entry blocker;~~
 - ~~(10) an antineoplastic;~~
 - ~~(11) an antiproliferative or anti-mitotic agent;~~
 - ~~(12) an anesthetic agent;~~
 - ~~(13) an anticoagulant;~~
 - ~~(14) an anti-thrombin antibody;~~
 - ~~(15) an anti-platelet receptor antibody;~~
 - ~~(16) a prostaglandin inhibitor;~~
 - ~~(17) a platelet inhibitor;~~
 - ~~(18) a vascular cell growth promoter;~~
 - ~~(19) a growth factor receptor antagonist;~~
 - ~~(20) a transcriptional activator;~~
 - ~~(21) a translational promoter;~~
 - ~~(22) a vascular cell growth inhibitor;~~
 - ~~(23) a growth factor receptor antagonist;~~
 - ~~(24) a transcriptional repressor;~~
 - ~~(25) a translational repressor;~~
 - ~~(26) a replication inhibitor;~~
 - ~~(27) an inhibitory antibody;~~
 - ~~(28) an antibody directed against a growth factor;~~
 - ~~(29) a bifunctional molecule consisting of a growth factor and a cytotoxin;~~
 - ~~(30) a cholesterol lowering agent;~~
 - ~~(31) a vasodilating agent;~~
 - ~~(32) an agent which interferes with endogenous vasoactive mechanisms; and~~
- a cell cycle inhibitors

~~(33) an anti-restenosis agent;~~

~~(34) a monocyte chemoattractant protein;~~

~~(35) a bone morphogenic protein;~~

~~(36) a hedgehog protein and~~

~~(37) a cell cycle inhibitors;~~

~~wherein the angiogenic agent is an acidic fibroblast growth factor, basic fibroblast growth factor, vascular endothelial growth factor, epidermal growth factor, transforming growth factor α and β , platelet derived endothelial growth factor, platelet derived growth factor, tumor necrosis factor α , hepatocyte growth factor, or insulin growth factor; and~~

(C) inserting or implanting said genetically coated medical device at a predetermined site in said mammal.

63-64. (canceled)

65. (new) The medical device of claim 60, wherein said vector is a viral vector.

66. (new) The medical device of claim 65, wherein said vector is an adenoassociated virus vector.

67. (new) The medical device of claim 60, wherein said polymeric coating comprises polyurethane, silicone, EVA, poly-l-lactic acid /poly ϵ -caprolactone blends, or a combination thereof.

68. (new) The medical device of claim 60, wherein said polymer coating is from about 1 to about 40 layers having a thickness of from about 1 to about 10 μm / layer of coating.
69. (new) The medical device of claim 60, wherein said structure is a stent.
70. (new) The medical device of claim 69, wherein said stent is a metallic stent.
71. (new) The medical device of claim 60, wherein said angiogenic agent is acidic or basic fibroblast growth factor.
72. (new) The medical device of claim 60, wherein said angiogenic agent is vascular endothelial growth factor.
73. (new) The medical device of claim 60, wherein said angiogenic agent is platelet-derived growth factor.
74. (new) The medical device of claim 60, wherein said angiogenic agent is platelet-derived endothelial growth factor.
75. (new) The medical device of claim 60, wherein said angiogenic agent is epidermal growth factor.

76. (new) The medical device of claim 60, wherein said angiogenic agent is transforming growth factor α or β .

77. (new) The medical device of claim 60, wherein said angiogenic agent does not include nitric oxide synthase.

78. (new) A method of inhibiting or treating restenosis in a patient, said method comprising administering at a predetermined site within the body of said patient the device of claim 60.

79. (new) The method of claim 78, wherein said site is a site of mechanical injury to an arterial wall produced by treatment of an atherosclerotic lesion by angioplasty.

80. (new) The method of claim 62, wherein said vector is a viral vector.

81. (new) The method of claim 80, wherein said vector is an adenoassociated virus vector.

82. (new) The method of claim 62, wherein said polymeric coating comprises polyurethane, silicone, EVA, poly-l-lactic acid /poly ϵ -caprolactone blends, or a combination thereof.

83. (new) The method of claim 62, wherein said polymer coating is from about 1 to about 40 layers having a thickness of from about 1 to about 10 μm / layer of coating.
84. (new) The method of claim 62, wherein said structure is a stent.
85. (new) The method of claim 84, wherein said stent is a metallic stent.
86. (new) The method of claim 62, wherein said angiogenic agent is acidic or basic fibroblast growth factor.
87. (new) The method of claim 62, wherein said angiogenic agent is vascular endothelial growth factor.
88. (new) The method of claim 62, wherein said angiogenic agent is platelet-derived growth factor.
89. (new) The method of claim 62, wherein said angiogenic agent is platelet-derived endothelial growth factor.
90. (new) The method of claim 62, wherein said angiogenic agent is epidermal growth factor.

91. (new) The method of claim 62, wherein said angiogenic agent does not include nitric oxide synthase.